



## Research Article

### A CLINICAL STUDY ON EFFECT OF *GOKSHURA KWATHA* IN THE MANAGEMENT OF *MUTRAGHATA* W. S. R. TO B.P.H

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#### ABSTRACT

**Introduction:** '*Mutraghata*' can be equated with group of obstructive uropathic disorders. As explained in Sushruta Samhitha, it is of 12 types and '*Vatasthila*' is one among them, which is closely similar to Benign Prostatic Hyperplasia. BPH is a progressive disease of advancing age. Histologically the inner zone of the periurethral gland undergoes hypertrophy and an adenoma is formed. Usually men around 60 years, suffer from mild, moderate and severe grade of BPH.

**Objectives:** To evaluate the efficacy of *Gokshura kwatha* in the management of *Mutraghata*/ B.P.H. and to improve quality of life of BPH sufferer.

**Method:** It is a single blind, clinical study on diagnosed cases of B.P.H, *Gokshura kwatha* was given for 60 days (20ml BD) with *Sita* and honey with follow-up of 4 months. Changes in subjective criteria (by IPSS Index) and objective criteria (by USG) were recorded before and after treatment.

**Result:** *Gokshurakwatha* shown more significant relief on associated symptoms of *Mutraghata* including, burning sensation, painful micturition, pus and blood discharge etc.

**Interpretation:** On the basis of the beneficial effects of *Gokshura kwatha churna*, it can be opined that it gives good result symptomatically.

**Conclusion:** The subjective features were relieved significantly. But observed, no much difference in the objective criteria. The effect of *Gokshurakwatha* on the straining significantly reduced, prostate size has not reduced significantly. As for follow up period, relief of symptoms observed to be sustained up to one month in majority of patients.

**KEYWORDS:** *Mutraghata*, *Vatasthila*, BPH, *Gokshurakwatha*, IPSS, USG.

#### INTRODUCTION

Age related changes are common and many a times are inevitable. Sometimes these changes pose many complications which further disturb the usual life style of the patient. BPH is one such condition where male individuals above 50 years are likely to suffer. The primary complaint will be incomplete voiding, difficulty in micturition, UTI and so on. These complaints are classified in modern urology as irritate and obstructive features. It is observed fact that as the age advances chances of BPH features tend to increase progressively.<sup>[1]</sup>

Sir Benjamin Brodie's said that,

"When the Hair becomes grey and thin, when there forms a white zone around the cornea, at the same time ordinarily, I dare say invariably, the prostate increase in volume".<sup>[2]</sup>

Benign prostatic hypertrophy is one of the most prevalent obstructive uropathies of advanced age group people above 50 years. It occurs in about half of men in their fifties and about 90% of men

over 85 years of age. BPH is a condition where there is increase in size of the prostate inside its capsule which exerts pressure on the urethra leading to the obstruction to the flow of urine.

It is a nodular hyperplasia, but its cause is not yet known definitely. There are theories to understand the etiology of BPH among which hormonal theory is more accepted. As it states that imbalance between Androgen and oestrogen may be the cause. In modern science, anatomical site of prostate is rectum and urinary bladder and ureter where the description of *Mutrasteela* is also having the same site. So *Vatasteela* closely resembles the BPH of modern science in its signs and symptoms.<sup>[3]</sup>

Currently available treatment options for the management of BPH include medical management to reduce the amount of prostate tissue and to increase the urinary flow and surgical management. Adverse effects by the medical management are headache, dizziness, hypotension, fatigue, reduced libido,

impotence, oligospermia, breast tenderness and enlargement. On the other hand, surgical management has been accepted as the standard management but it is also associated with many disadvantages as well as complications. So in this age group there is a need for much safer, alternative method of management.

In this regard, Ayurvedic approach using classical medicines in the management of BPH is required. *Vatastheela* which is having close resemblance with BPH in its signs and symptoms and number of drugs are available for the management of *Mutraghata*.<sup>[4]</sup> Among them *Gokshura (Panchanga) kwatha Churana* was taken for the study. These are having *Basti Shodaka* and *Mutrala* properties. Hence the clinical study was undertaken to evaluate the efficacy of *Gokshura kwatha churana* over subjective and objective parameters of BPH.

#### OBJECTIVES OF THE STUDY:

- To evaluate the efficacy of *Gokshura Kwatha* in the management of *Mutraghata*/ B.P.H.
- To carryout intensive study in relation to aetio-pathogenesis of *Mutraghata* and its management vis-a-vis BPH.
- To derive a standard and easily accessible, cost effective treatment for this disorder.

#### Historical Review

The whole concept of Urology, Nephrology is explained in Ayurveda under the headings of *Mutraghata*, *Krichra* and also *Ashmari*.<sup>[5]</sup> It is noteworthy that the physiology of urine formation is explained in *Ashmari Nidana*, as understanding normal physiology is of utmost value in assessing pathological events. It is as follows.

#### Sushruta Samhita

The improper emptying of bladder which is due to *Pratilomavayu*, is considered as the responsible factor for the diseases of *Basti* viz. *Mutraghata*, *Ashmari*, *Prameha* and *Mutradosha*. *Acharya Sushruta* has explained twelve types of *Mutraghata* in *Uttaratantra* but he has not mentioned *Bastikundala* and *Vidvighata* varieties.<sup>[6]</sup>

#### Charak Samhita

Here we get ample but scattered reference related to anatomy, physiology and pathology of *Mutravaha Srotas* as well as the diagnosis and treatment of its disorders. In *Sutrasthana* 4th chapter, *Mutrasangrahaneeya*, *Mutravirajaneeya* and *Mutravirechaneeya Mahakashayas* have been dealt with. *Basti* and *Vankshana* have been considered as the *Moola* of *Mootravaha Srotas* and its *Dushti* leads to excessive urination, oliguria, increased frequency, painful micturition etc. Regarding the disease *Mutraghata*, *Acharya Charaka* has mentioned eight

types in *Sutrasthana*.<sup>[7]</sup> Further, in *Siddhisthana*, thirteen types of *Bastirogas* have been described under the caption of "*Mutradosha*", which are similar to that of *Mutraghata* as explained by *Sushruta*.

#### Mutraghata

The '*Vrikkas*' are the *Koshtangas* situated on the either side of the vertebral column and *Dalhana* tells that they are ball-shaped, compact and dense, covered by fleshy masses and lie in the *Kukshi* - region (*Dalhana* on *Su. Sha.* 4/331).<sup>[8]</sup> It could be well assumed that the description of *Dalhana* indicate towards the 'kidneys'. With all efforts to correlate the anatomy as explained in modern medicine with that explained in Ayurveda we feel that there is some missing link in the available literature. That's why many a times it is not possible to correlate exactly. May be further research in literature may throw still more light on such areas.

The term '*Mutraghata*' comprises two words viz. '*Mutra*' and '*Aghata*', which stands for low urinary output either by retention, absolute or relative anuria or oliguria.

#### Review on Mutrasthila

All the *Mutra Rogas* that is *Mutraghata*, *Prameha*, *Shukra Dosha*, *Mutra Dosha* etc. diseases are described as occurring in the *Basti*. 58 Out of 12 *Mutraghata* explained, *Vatasthila* is considered for the obstruction of the flow of urine by means of *Asthilavatgnanthi* that is enlarged prostatic gland. But in *Vatavyadhi* also we get the reference of *Vatasthila* having features of *Ghana*, *Ayata*, *Unnata* *Asthilavat Granthi* producing *Margavarana* to the flow of urine.<sup>[9]</sup>

It seems like that the *Vatasthila* told in the context of the *Mutraghata* is similar to that of the *Vatavyadhi*, because the word *Mutrasthila* has been coined here as it is related with the *Mutra Roga* and there it is mentioned as the main cause is *Apana vata*, otherwise symptoms given in both places are same.

#### Chikitsa

General line for treatment for *Mutradosha* is as follows; *Snehana*, *Swedana* and *Virechana* followed by *Uttarabasti*.

#### Mootraghata Chikitsa

For *Mutrasthila* separate *Chikitsa* has not been told. The *Chikitsa* of the *Mutraghata* are as follows.

#### According to Sushruta

"*Kashaya kalkasarpinshibhakshyanlehanpayansi cha ksharamadyasavasvedanBastinschottarasamjnitandvid adyanmatimanstatravidhimchashmarinashanammutr odavartayoganschakatsneryenatraprayojayet*"

i.e. drugs in the form of *Kashaya*, *Kalka*, *Sarpi*, *Bhakshya*, *Avaleha*, *Payas*, *Kshara*, *Madya*, *Asava*,

*Svedana, Basti, Uttara Basti* and the formulations told in context of *Ashmari*, and *Mutrodavarta* diseases are useful. [10]

## Drug Review

The drug chosen for the study was *Gokshurakwatha* 'The preparation of the *Gokshurakwatha*' has been described in the *Bhaishajya Ratnavali* as having *Vata-Pitta hara*, *Mutrala*, *Rasayana* properties indicated in *Mutrarogas*. The detail of this drug is as follows.

"*Sa patra phala moolasyakwathamgokshurasyacha/ pibethmadhusitayukthammootraaghatarooganuth*". [1]

## Guna, Karma and Swroopa

### Gana

**Caraka**-Shothahara, Mootravirechaniya, Krimigna.

**Sushruta**-Vidarigandhadi, Viratarvadi, Laghu Panchamoola. Vagbhata-Vidarigandhadi.

**Bhavaprakasha**: Guduchadivarga

**B.Name**: *Tribulus terrestris* Linn.

**Family**: Zygophyllaceae

**Synonyms**: *Ikshugandhika*, *Svadamstra*, *Trikantaka*, *Swadukantaka*, *Palankasha*.

### Vernacular names

**Sanskrit Name**: *Gokshura*

**Hindi**: *Gokharu*

### Properties

**Rasa**: Madhura

**Guna**: Guru, Snigdha

**Veerya**: Seeta

**Vipaka**: Madhura

**Karma**: *Vata-Pitta hara*, *Vrshya*, *Mootrala*, *Rasayana*.

**Acc to Bhava Prakash**: *Sheetala*, *Bastishodhana*, *Pramehaswasakasa*.

**On Mutravaha Samsthana**- it acts as *Mutrala* so used in the *Mutrakrucchra* and *Mutraghata*.

### Chemical constituents

**Fruits**: Chlorogenin, diosgenin, gitogenin, rutin, rhamnose.

**Roots**: campesterol, beeta-sitosterol, neotigogenin.

### Important formulations

*Gokshuradi Guggulu*, *Gokshraka Rasayana*, *Gokshuradichoorna*, *Gokshuradyavaleha*, *Gokshuradi Kwata*, *Dashamoolarista*.

## MATERIALS AND METHODS

The study dealt with the "Clinical evaluation of *Gokshura Kwatha Churna* in the management of Benign Prostate Hypertrophy (BPH)".

## Study Design

It is an interventional study, comprising of pre-test and post-test design. For this study 30 patients were taken up in single group, the sign and symptoms before and after treatment were observed, and recorded in the mentioned proforma of the case sheet of BPH.

## Source of Data

The patients fulfilling the diagnostic criteria were selected from OPD and IPD of Sri Jagadguru Gavisideshwara Ayurvedic Medical College and Hospital, Koppal.

Patients were also selected from referral sources and special camps were conducted for the purpose

## Method of Collection of Data

Patients fulfilling the criteria for International Prostate Symptoms Scoring (I-PSS) were selected. The cases of B.P.H. were confirmed by digital rectal examination and Ultrasonography of abdomen and pelvis.

## Sampling Design

A total 30 cases of B.P.H. after considering the above mentioned criteria were included for the study.

## Diagnostic Criteria

- Subjective**: Clinical symptoms of *Mootraghata* as mentioned in classics and modern texts.
  - I-PSS (International prostate symptom scoring)
- Objective**: DRE (Digital Rectal Examination) USG (Ultrasonography)

## Inclusion Criteria

- Elderly male patients with clinical features of BPH.
- Patients fulfilling the criteria of I-PSS, DRE and USG.
- Patients who are mentally alert.

## Exclusion Criteria

- Patients in whom surgery is unavoidable
- Ca Prostate
- Ca Rectum
- Neurogenic bladder
- Stricture urethra
- CNS disorder

Other systemic disorders, which interfere with the course of treatment.

## Study design

25ml of *Gokshura (Panchanga) Sidda Kashaya* were given two times daily after food with *Sita* and *Madhu* as *Anupana* for 2 months orally. [7]

- Suitable *Pathya* and *Apathya* were advised to the patient during the treatment.
- Observation: Every 15th day
- Follow up: 4 months

**Subjective parameters**

1. Clinical symptoms of *Mutraghata*.
2. As per IPSS-International Prostate Symptom Scoring

**Assessment Criteria****Table1: Showing Assessment Criteria as per IPSS-International Prostate Symptom Scoring**

In the past month	Not at all	Less than 1 in 5 times	Less than half the time	About half the time	More than half time	Almost always	Your score
Incomplete emptying how often have you had the sensation of not emptying your bladder?	0	1	2	3	4	5	
Frequency how often have you had to urinate less than every two hours?	0	1	2	3	4	5	
Intermittency how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
Urgency How often have you found it difficult to postpone urination?	0	1	2	3	4	5	
Weak Stream How often have you had a weak urinar stream?	0	1	2	3	4	5	
Straining How often have you had to strain to start urination?	0	1	2	3	4	5	
	None	1Time	2 Time	3Time	4 Time	5 Time	
Nocturia How many times did you typically get up at night to urinate?	0	1	2	3	4	5	
Total I-PSS Score							

**Score:1-7: Mild 8-19: Moderate 20-35: Severe****Objective parameter**

1. DRE(Digital Rectal Examination)
2. Ultrasonography (USG) Abdomenopelvis.

**OBSERVATIONS AND RESULTS**

All the 30 diagnosed cases of BPH were registered for the study then assessed and recorded according to specially prepared proforma. The details are as follows;

**Results of incomplete emptying symptom during the study****Table 2: Showing incomplete emptying symptom during the study**

BT	60 days	90 days	180 days
3.133	1.767	1.633	1.367

**Results of incomplete emptying at the end of study-****Table 3: Showing incomplete emptying at the end of study**

BT	AT	Difference	%improvement	Paired Test			
3.13	1.76	1.36	43.63%	S.D	S.E	't'	'p'
				1.033	0.1887	7.244	<0.00013



Before the treatment with *Gokshura Kwatha*, mean score of incomplete emptying was 3.13 which after 60 days (AT) changed to 1.76 with 43.63% relief ( $P < 0.0001$ ), decreased the incomplete emptying 47.87% in 90th day, decreased to 56.39 % after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Results of frequency symptom during study

**Table 4: Showing frequency symptom during study**

BT	60days	90days	180days
2.367	1.567	1.433	1.067

#### Results of intermittency symptom at the end of study

**Table 5: Showing Results of intermittency symptom at the end of study**

BT	AT	Difference	% improvement	Paired Test			
2.967	1.867	1.1	37.07%	S.D	S.E	't'	'p'
				0.803	0.1466	7.503	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of intermittency was 2.9 which after 60 days (AT) changed to 1.86 with 37.07% relief ( $P < 0.0001$ ), decreased the intermittency 39.33% in 90th day, decreased to 53.92 % after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Results of Urgency symptom during the study

**Table 6: Showing Results of Urgency symptom during the study**

BT	60 days	90 days	180 days
3.567	2.167	2.033	1.533

#### Results of urgency symptom at the end of study

**Table 7: Showing Results of urgency symptom at the end of study**

BT	AT	Difference	% improvement	Paired Test			
3.567	2.167	1.4	39.24%	S.D	S.E	't'	'p'
				1.07	0.1953	7.167	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of urgency was 3.5 which after 60 days (AT) changed to 2.16 with 39.24% relief ( $P < 0.0001$ ), decreased the urgency 42.92% in 90th day, decreased to 56.99 % after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Results of weak stream symptom during the study

**Table 8: Showing Results of weak stream symptom during the study**

BT	60 days	90 days	180 days
2.833	1.8	1.867	1.333

#### Results of straining symptom during the study

**Table 9: Showing Results of straining symptom during the study**

BT	60 days	90 days	180 days
3.467	1.567	1.4	1.2

Before the treatment with *Gokshura Kwatha*, mean score of straining was 3.4 which after 60 days (AT) changed to 1.5 with 54.8% relief ( $P < 0.0001$ ), decreased the straining 59.61% in 90th day, decreased to 65.38% after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Results of nocturia symptom during the study

**Table 10: Showing Results of nocturia symptom during the study**

BT	60 days	90 days	180 days
2.133	1.267	1.2	1.033

#### Results of nocturia symptom at the end of the study

**Table 11: Showing Results of nocturia symptom at the end of the study**

BT	AT	Difference	% improvement	Paired Test			
2.133	1.267	0.8667	40.63%	S.D	S.E	't'	'p'
				0.8193	0.1496	5.794	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of nocturia was 2.13 which after 60 days (AT) changed to 1.26 with 40.63% relief ( $P < 0.0001$ ), decreased the nocturia 43.75% in 90th day, decreased to 51.57 % after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Results of total score of IPSS during the study

**Table 12: Showing Results of total score of IPSS during the study**

BT	60 days	90 days	180 days
20.43	12	11.37	8.867

#### Results of total score of IPSS scoring before and after treatment

**Table 13: Showing Results of total score of IPSS scoring before and after treatment**

BT	AT	Difference	% improvement	Paired Test			
20.43	12	8.433	40.78%	S.D	S.E	't'	'p'
				5.618	1.026	8.222	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of total score was 20.43 which after 60 days (AT) changed to with 40.78% relief ( $P < 0.0001$ ), decreased the total score 44.38% in 90th day, decreased to 56.63 % after 180 days of treatment with statistically significant at P value  $< 0.0001$ .

#### Objective criteria by USG

#### Results of prostate volume before and after treatment

**Table 14: Showing Results of prostate volume before and after treatment**

BT	AT	Difference	% of improvement	Paired Test			
40.87	28.86	9.536	23.3	S.D	S.E	't'	'p'
				10.19	1.925	4.954	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of prostate volume was 40.87 which after 60 days (AT) changed to 28.86 with 23.33% relief with statistically significant at P value  $< 0.0001$ .

#### Results of post-voidal residual urine (PVRU) before and after treatment

**Table 15: Showing Results of post-voidal residual urine (PVRU) before and after treatment**

BT	AT	Difference	% Improvement	Paired Test			
34.93	20.37	14.57	41.71%	S.D	S.E	't'	'p'
				13.67	2.496	5.582	<0.0001

Before the treatment with *Gokshura Kwatha*, mean score of post voiding residual volume was 34.93 which after 60 days (AT) changed to 20.37 with 41.71% relief with statistically significant at P value  $< 0.0001$ .

#### Results of prostate grading before and after treatment

**Table 16: Showing Results of prostate grading before and after treatment**

BT	AT	Difference	% of improvement	Paired Test			
1.6	1.133	0.5	30.60	S.D	S.E	't'	'p'
				0.861	0.163	3.181	<0.0035

Before the treatment with *Gokshura Kwatha*, mean score of prostate grading was 1.633 which after 60 days (AT) changed to 1.13 with 30.61% relief with P value  $< 0.0035$ .

#### Overall assessment of results

**Table 17: Table showing Overall assessment of results**

Effects	No. of Patients	%
Complete remission	1	3.3
Marked improvement	2	6.7
Moderate improvement	12	40
Mild improvement	7	23.3
Unchanged	8	26.7

Among all 30 Patients, 12 (40%) patients got moderate improvement, 7 (23.3%) patients got mild improvement, 2 (6.7%) patients got marked improvement, 1 (3.3%) patient got complete remission and 8 (26.7%) patients remain unchanged.

## DISCUSSION

Benign prostatic hypertrophy is one of the most prevalent obstructive uropathy of advanced age group people above 50 years. Its symptoms and signs closely resemble with *Vatashtila*.

*Gokshura Kwatha Churna* was selected for the study which is mentioned in *Bhaishajya Ratnavali*, in the context of *Mootraghata Chikitsa Prakaranam*. The *Gokshurakwatha choorna* prepared with *Panchanga* of *Gokshura* as is having *Basti Shodaka* and *Mutrala* properties.

In this study the eligibility criteria of age group were above 45- 80 years. It is observed that majority of the patients belonged to the age group of 50- 60 years (50%) and minimum i.e., 20 % in age group of 60 - 70 years.

As studies shows that BPH is age dependent, with initial development usually after 45 years of age. By 60 years of age, its prevalence is greater than 50% and by age 85 is as high as 90%.

### Effect of *Gokshura Kwatha Churna* on 30 patients of BPH

#### Effect on Incomplete emptying and Frequency

*Gokshura Kwatha Churna* provided 43% improvement in incomplete emptying with statistically significant p value <0.0001.

*Gokshura Kwatha Choorna* provided 33% improvement in Frequency with statistically p value 0.0004.

When we compare results of incomplete emptying and Frequency, it is found that there is very good positive effect on incomplete emptying on 90th day i.e. after treatment. And sustained improvement in frequency observed after completion of follow up period also. Thus, this single drug formulation can be considered to be having effect on incomplete emptying and frequency.

It's the positive effect on *Avarodh* in *Mootramarga* which helped in complete emptying of bladder reducing the frequency.

#### Effect on Intermittency

*Gokshura Kwatha Choorna* showed relief on intermittency by 37% which is statistically significant p value <0.0001. It is found that there is more reduction of Intermittency after the completion of treatment. This can be attributed to positive effect on *Apanavata* which regulates the act of urination.

#### Effect on Urgency of urination

*Gokshura Kwatha Choorna* showed relief of 39% which is statistically highly significant. This can be attributed to *Apana Vata* moving in proper direction, which restores the bladder functioning.

#### Effect on Weak Stream

*Gokshura Kwatha Choorna* provided 36% improvement which is statistically significant. This can be attributed to *Madhura Vipaka*, *Madhura Rasa* and *Snigdha Guna* which gives strength to *Basti*, hence improvement in the stream.

#### Effect on Straining

*Gokshura Kwatha Choorna* provided 54% of improvement, which is statistically significant.

This can be attributed to positive effect on *Avarodha* in *Mootramarga* with improvement in bladder functioning, because of regulated *Apana Vayu*. This whole coordinated functioning results in easy flow of urine with complete emptying. Thus patient feels relief and doesn't require to strain.

#### Effect on Nocturia

*Gokshura Kwatha Choorna* showed 40% improvement on nocturia. This can be attributed to reduced pressure on Urethra, improved bladder functioning resulting in effective emptying.

#### Effect on AUA score

*Gokshura Kwatha Choorna* provided, 40% improvement with statistically significant p value <0.0001.

#### Effect on volume of Prostate

*Gokshura Kwatha Choorna* provided 23% of relief after the completion of treatment.

#### Effect on Post Residual Volume

*Gokshura Kwatha Choorna* provided 41% of relief after the completion of treatment.

By seeing the overall result, it can be opined that there is more improvement in subjective criteria rather than objective criteria.

## CONCLUSION

*Mutraghata* is a group of Obstructive Urinary disorders, has been dealt in detail in almost all ancient treatises. In which the *MutrAGRAnthi*, *Mutrasanga*, *Bastikundalika* and *Mutrashthila* are the conditions which are similar to the BPH in respective of obstructive as well as irritative phases. But it is very difficult to pinpoint a single condition and therefore these can be opined that these varieties could be the different stages at which a patient present. In present study, *Mutrashthila* has been correlated with BPH as it resembles both anatomically and symptomatically.

The Total effect of the formulation has provided considerably significant relief on the subjective as well as objective parameters. The subjective features were relieved significantly. It is observed that there was no much difference in the objective criteria. The effect of *Gokshurakwatha* on

the straining significantly reduced, though the prostate size had not reduced significantly. As for as the follow up period is concerned, relief of symptoms observed to be sustained up to one month in majority of patients.

It has been observed that effect of *Gokshurakwatha* shown more significant relief on associated symptoms of *Mutraghata* including, burning sensation, painful micturition, pus and blood discharge etc. This proves that the medicine is highly effective in UTI.

A further study taking more sample size can show new vista in the effective medical management of BPH.

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### Cite this article as:

Shilpa Karaddi, Aakash Kembhavi. A Clinical Study on Effect of Gokshura Kwatha in the Management of Mutraghata w. s. r. to B.P.H. International Journal of Ayurveda and Pharma Research. 2018;6(11):1-8.

**Source of support: Nil, Conflict of interest: None Declared**

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